	Application No.	Applicant(s)
Notice of Allowability	10/662,691	SIPILA, TEEMU
	Examiner	**Art Unit**	
	Esaw T. Abraham	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amdt filed on 05/11/07*.

2. ☒ The allowed claim(s) is/are *1, 3-10, 12-19 (renumbered as 1-17)*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

GUY LAMARRE
PRIMARY EXAMINER

Examiner's statement for reason for allowance

1.   Claims **1, 3-10 and 12-19** have been allowed.

The following is an examiner's statement for allowance:

As per claim 1:

The prior art of record, Hosevar et al. (U.S. PN: 6,690,750) teach or disclose a

Viterbi decoder (110) (see FIG. 6) and a method of decoding plurality of trellis stages

(see FIG. 5) simultaneously via a cascaded ACS (122) (see FIG. 7 and col. 6 lines 15-

30). Further, Hosevar et al. teach that the cascaded ACS (122), in conjunction with the

state metric memory (126), determines a set of accumulated state metrics (125), which

also referred to as path metrics, for each stage in the trellis as the decoding process

moves forward in time and furthermore the cascaded ACS (122) performs additions,

subtractions, and comparisons, with a set of incoming branch metrics (134) and selects

new state metrics from which path decision values (124) are determined (see col. 7,

lines 19-43).

The prior art of record, Rossman (U.S. PN: 5,027,374) teaches a circuit ACS

array (comprising ACS units or circuits) connected directly between the ACS circuits in

series (see figure 3 elements 20-23) derived from trellis of figure 1 (for example: the

output of element 22 is directly connected to the input of element 20 and the output of

20 is directly connected to the input of element 21 etc...(see col. 4, lines 17-33 and

claim 5).

However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a memory for storing the calculation results and that the connections between the inputs and outputs of the ACS units are implemented in such a manner that logv P path metrics are calculated per one memory read/write operation pair, wherein P is the number of data paths and Y is the number of branches from/to a state. Consequently, claim 1 is allowed over the prior art.

Claims **3-9,** which is/are directly or indirectly dependent/s of claim 1 are also allowable over the prior art of record.

As per claim 10:

The prior art of record, Hosevar et al. (U.S. PN: 6,690,750) teach or disclose a Viterbi decoder (110) (see FIG. 6) and a method of decoding plurality of trellis stages (see FIG. 5) simultaneously via a cascaded ACS (122) (see FIG. 7 and col. 6 lines 15-30). Further, Hosevar et al. teach that the cascaded ACS (122), in conjunction with the state metric memory (126), determines a set of accumulated state metrics (125), which also referred to as path metrics, for each stage in the trellis as the decoding process moves forward in time and furthermore the cascaded ACS (122) performs additions, subtractions, and comparisons, with a set of incoming branch metrics (134) and selects new state metrics from which path decision values (124) are determined (see col. 7, lines 19-43).

The prior art of record, Rossman (U.S. PN: 5,027,374) teaches a circuit ACS array (comprising ACS units or circuits) connected directly between the ACS circuits in series (see figure 3 elements 20-23) derived from trellis of figure 1 (for example: the

output of element 22 is directly connected to the input of element 20 and the output of

20 is directly connected to the input of element 21 etc...(see col. 4, lines 17-33 and

claim 5).

However, the prior art taken singly or in combination fail to teach, anticipate,

suggest, or render obvious a method for storing the calculation results into a memory

and calculating logv P path metrics per one memory read/write operation pair, wherein

P is the number of data paths and Y is the number of branches from/to a state; and

generating decoded data based upon the calculated set of consecutive metrics.

Consequently, claim 10 is allowed over the prior art.

Claims **12-18,** which is/are directly or indirectly dependent/s of claim 10 are also

allowable over the prior art of record.

As per claim 19:

The prior art of record, Hosevar et al. (U.S. PN: 6,690,750) teach or disclose a

Viterbi decoder (110) (see FIG. 6) and a method of decoding plurality of trellis stages

(see FIG. 5) simultaneously via a cascaded ACS (122) (see FIG. 7 and col. 6 lines 15-

30). Further, Hosevar et al. teach that the cascaded ACS (122), in conjunction with the

state metric memory (126), determines a set of accumulated state metrics (125), which

also referred to as path metrics, for each stage in the trellis as the decoding process

moves forward in time and furthermore the cascaded ACS (122) performs additions,

subtractions, and comparisons, with a set of incoming branch metrics (134) and selects

new state metrics from which path decision values (124) are determined (see col. 7,

lines 19-43).

The prior art of record, Rossman (U.S. PN: 5,027,374) teaches a circuit ACS array (comprising ACS units or circuits) connected directly between the ACS circuits in series (see figure 3 elements 20-23) derived from trellis of figure 1 (for example: the output of element 22 is directly connected to the input of element 20 and the output of 20 is directly connected to the input of element 21 (see col. 4, lines 17-33 and claim 5).

However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a memory for storing the calculation results into a memory and calculating logv P path metrics per one memory read/write operation pair, wherein P is the number of data paths and Y is the number of branches from/to a state; and generating decoded data based upon the calculated set of consecutive metrics. Consequently, claim 19 is allowed over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2.   Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone

numbers for the organization where this application or proceeding is assigned (571) 273-8300.

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Esaw Abraham

Art unit: 2112

GUY LAMARRE
PRIMARY EXAMINER